

REMARKS/ARGUMENTS

Claims 1 – 9 are presented for reconsideration and further examination in view of the foregoing amendments and following remarks.

In the outstanding Office Action, the Examiner objected to the Abstract due to use of legal phraseology; rejected claim 1 – 3 and 5 under the judicially created doctrine of obviousness-type double patenting in view of U.S. Patent No. 6,592,373 (hereinafter referred to as “the 373 patent”); rejected claims 6 and 7 under 35 U.S.C. §112, second paragraph as being indefinite; rejected claims 1 and 5 – 9 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,015,332 to Manne (hereinafter referred to as “the Manne ‘332 patent”); and rejected claims 2 – 4 under 35 U.S.C. §103(a) as being unpatentable over the Manne ‘332 patent in view of U.S. Patent No. 6,186,790 to Karmaker et al. (hereinafter referred to as “the Karmaker et al. ‘790 patent”).

By this Response and Amendment,
the Abstract has been amended to remove legal phraseology;
a terminal disclaimer has been filed thereby obviating the double patenting rejection;
claim 6 has been amended to recite “[a] dental crown according to claim 5, produced by a mass production injection molding method, said mass production injection molding method comprising...;” and;

claim 1 has been amended to recite “...*a continuous structure of depending flexible side surfaces, at least a part of said structure having an inwardly directed bottom portion;*” and as amended, the rejections to claim 1 and the rejections to the claims dependent thereon are traversed.

Support for the amendment to claim 1 can be found in the third paragraph of the “Detailed Description” section of the originally filed application; and support for the amendment to claim 6 can

be found in the first paragraph of the “Summary of the Invention” section of the originally filed application. Therefore, it is respectfully submitted that the above amendments do not introduce any new matter, within the meaning of 35 U.S.C. §132, to this application.

Objection to the Abstract

The Examiner objected to the Abstract due to its recitation of legal phraseology such as the term “said.” The Examiner requires that the phraseology of the Abstract be corrected.

Response

By this Response and Amendment, Abstract has been amended to remove the word “said,” which the Examiner regards as legal phraseology.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the objection to the Abstract.

Double Patenting Rejection

The Examiner rejected claims 1 – 3 and 5 under the non-statutory judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 – 3 of the ‘373 patent. The Examiner indicated that a terminal disclaimer may be used to overcome a rejection based on a non-statutory double patenting ground.

Response

Along with this Response and Amendment, Applicant has filed a terminal disclaimer, thereby obviating the obviousness-type double patenting rejection.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the non-statutory obviousness-type double patenting rejection.

Rejections Under 35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 6 and 7 as being indefinite asserting that the claims have mixed article and method features, which make it unclear whether a multi-element mold is claimed as part of the dental crown.

Response

By this Response and Amendment, claim 6 has been amended to recite “[a] dental crown according to claim 5, *produced by a mass production injection molding method*, said mass production injection molding method comprising....” As amended, claim 6 recites a product produced by a process. As such, Applicant asserts that claim 6 and claim 7, which depends from claim 6, are not indefinite.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §112, second paragraph.

Rejection Under 35 U.S.C. §102(b)

The Examiner rejected claims 1 and 5 – 9 as being anticipated by the Manne ‘332 patent. The Examiner refers to column 4, line 69 of the Manne ‘332 patent, and indicates that “Manne discloses a dental crown formed of a thermoplastic polymer material comprising a tooth shaped top surface and flexible side surfaces, at least one of which includes inwardly directed bottom portion.” *Office Action* at 3.

Response

By this Response and Amendment, independent claim 1 has been amended and, as amended, the rejections thereto are traversed as all of the features of amended independent claim

1 are not present in the cited prior art.

For a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131.

Amended independent claim 1 recites: “[a] dental crown formed of a thermoplastic polymer material, said crown comprising: a tooth shaped top surface; and *a continuous structure* of depending flexible side surfaces, at least a part of said structure having an inwardly directed bottom portion.”

The Manne ‘332 patent addresses a problem of adjusting a dental crown to variable teeth dimensions by configuring the crown to “include a *hinge structure* so that [it] will accommodate teeth of variable dimensions.” *See The Manne ‘332 Patent* column 2, lines 26 – 30. Also, *discontinuities* (identified as splits 28 in the Manne ‘332 patent) in the walls of the crown allow the crown to flex at the hinge. The Manne ‘332 patent discloses that a “*necessary structure* in the crown forms of the invention are splits 28 in the side walls.” *The Manne ‘332 Patent* col. 4, lines 36 – 37.

The crown of the presently claimed invention is different from that disclosed in the Manne ‘332 patent in that the dental crown of the presently claimed invention is made of a flexible thermoplastic polymer material defining “a tooth shaped top surface; and a continuous structure of depending flexible side surfaces, at least a part of said structure having an inwardly directed bottom portion” defining an undercut 16 (as clearly illustrated in Figs. 1 and 2 of the present application).

The crown disclosed in the Manne ‘332 patent does not have a “continuous structure.”

On the contrary, the crown disclosed in the Manne '332 patent addresses the problem of adjusting a crown so that it will accommodate variable teeth dimensions by configuring the crown to have discontinuities including a hinge structure and splits 28 in specific positions of the shell sidewalls. *See The Manne '332 Patent* col. 2, lines 26 – 30. The splits 28 are *required* to permit the crown forms to flex open and closed along a hinge axis on the occlusal surface of the crown, *see The Manne '332 Patent* at col. 4, lines 36 – 37, thereby facilitating installation on a variety of tooth sizes. *See also The Manne '332 Patent* Abstract; col. 4 lines 50 – 57; and column 5 lines 31 – 38). These splits make it impossible for the crown to have a “continuous structure” as recited in amended independent claim 1. Thus, for at least the reason that Manne '332 patent does not disclose a crown having a “continuous structure” as recited in amended independent claim 1 of the present application, the presently claimed invention is patentable over the cited prior art.

It is also clear from comparisons of figures 1 and 2 of the Manne '332 patent with figures 1 and 2 of the present application, that crown of the presently claimed invention has an essentially different configuration than the crown disclosed in the Manne '332 patent.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §102(b).

Rejection Under 35 U.S.C. §103(a)

The Examiner rejected claims 2 – 4 under 35 U.S.C. §103(a) as being unpatentable over the Manne '332 patent in view of the Karmaker et al. '790 patent.

Response

The arguments above with respect to the Manne '332 patent are hereby incorporated by

reference.

By this Response and Amendment, independent claim 1 has been amended and, as amended, Applicant respectfully traverses the Examiner's rejection as all of the features of amended independent claim 1 are neither disclosed, taught, nor suggested by the cited prior art.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) the prior art references teach or suggest all of the claim limitations. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

The Karmaker et al. '790 patent discloses structural components for dental appliances that are comprised of a polymeric matrix. The Karmaker et al. '790 patent discloses that uses for the structural components include crowns. In contrast to the presently claimed invention however, the Karmaker et al. '790 patent does not disclose, teach or suggest that the crown is "a *continuous* structure of depending flexible side surfaces" as recited in independent claim 1. As a "continuous structure" is not disclosed, taught or suggested by the Karmaker et al. 790 patent, the Karmaker et al. '790 patent does not, by itself or in combination with the Manne '332 patent, render the presently claimed invention obvious.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the outstanding rejections.

CONCLUSION

In light of the foregoing, Applicant submits that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney if it is believed that such


contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicant petitions for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,
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